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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,739	02/03/2004	Weiling Peng	HARD1.007C1	1004

20995 7590 12/28/2005

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EXAMINER

Thompson, Camie S

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/770,739		PENG ET AL.	
	Examiner		Art Unit	
	Camie S. Thompson		1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE filed 11/14/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 8-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-19 and 22-26 is/are rejected.
- 7) ☒ Claim(s) 20 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/14/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 14, 2005 has been entered.
2. Applicant's amendment and accompanying remarks filed November 14, 2005 have been acknowledged.
3. Examiner acknowledges cancelled claims 4-7.
4. Examiner acknowledges newly added claims 22-26.
5. The rejection of claims 17 and 20-21 under 35 U.S.C. 103(a) as being unpatentable over Guyette, U.S. Patent Number 5,425,986 is withdrawn due to applicant's argument.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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7. Claims 1-3, 8-19 and 22-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Guyette, U.S. Patent Number 5,425,986.

Guyette discloses a high-pressure laminate structure that can be suitable for flooring (see column 1, lines 44-62). The Guyette reference discloses a laminate structure comprising a fiber cementboard as a core layer or substrate (11) having a top and bottom surface and at least one resin impregnated sheet (30) on at least one side of the substrate (see Figure 1). Additionally, the reference discloses an adhesive (20), which can be an isocyanate/urethane, epoxy or polyvinyl acetate that is between the substrate and the at least one resin impregnated sheet (see Figure 2 and column 6, lines 15-35). Column 4, lines 49-68 of the reference disclose that the resin used to impregnate the sheets include melamine-formaldehyde resin and phenol-formaldehyde resin as per the instant claims. Also, Figure 1 of the reference discloses that a resin impregnated paper (30 and 31) can be laminated to both sides of the substrate. Additionally in Figure 1, another resin impregnated (41) sheet can be laminated onto another resin impregnated sheet (30) as per instant claim 12. The elongation, modulus of elasticity and glass transition temperature of the elastomer are 20-1200%, 10-10,000 psi and -90 and 50°C respectively as they are the physical properties of isocyanate/urethane and various epoxy adhesives and would therefore be inherent. Isocyanate/urethane adhesives have a high elastic modulus and would provide sufficient stress relief to prevent delamination between the cementitious material and the at least one resin impregnated paper after the laminated structure is incubated at a temperature of about 60° C for not less than three days; dessicated in a relative humidity environment of not more than 10% for a period of not less than two days or subjecting the structure to at least five serial wet and dry cycles wherein said dry cycle comprises incubating said laminate structure for about twenty-four

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hours for about 60°C and said wet cycle comprises soaking said laminate structure in water for twenty-four hours.

8. Claims 20 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not provide for the recited building material, further including the thickness of the elastomeric film is about 5 mil or less.

Response to Arguments

9. Applicant's arguments filed November 14, 2005 have been fully considered but they are not persuasive. Applicant argues that the Guyette reference does not disclose a stress-relieving elastomer that acts as a stress relaxer between two layers. Guyette discloses that an adhesive (20) is between the substrate and the at least one resin impregnated sheet. Adhesives can be elastomers. Guyette discloses that the adhesive can be an epoxy or isocyanate/urethane. Isocyanate/urethane has a high elastic modulus and would provide sufficient stress relief. Also, applicant argues that the Guyette reference does not specify that the adhesive is elastomeric. The reference does disclose the use of adhesive based on isocycante/urethane and epoxy as the adhesives. Guyette describes a broad range of epoxy and would thus include epoxies that have elastomeric properties. Also, Guyette discloses the use of polyvinyl acetate as an adhesive. Polyvinyl acetate is known to be resistant to weathering, as is the elastomer claimed by applicant. Applicant also argues that the reference contemplates the adhesives to be used as rigid adhesives and that the adhesives are intended to be subjected to heat and pressure. Guyette discloses that the entire assembly is subjected to heat and pressure until the entire assembly is


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consolidated into a unitary laminate structure. Guyette does not disclose that the adhesive itself is a rigid adhesive. Guyette discloses a broad range of adhesives (epoxy), which can include epoxies that are elastomeric. Applicant argues that elastomers have network structure generated or “set” by thermally-induced cross-linking reactions. Reactive epoxies form a tight cross-linked polymer network (see Hawley’s Condensed Chemical Dictionary, Fourteenth Edition, Richard J. Lewis, Sr.). The Guyette reference discloses a broad range of epoxies, which can include reactive epoxies. Applicant argues that the Guyette reference wants to create a “high pressure” unitary laminate structure. Applicant argues that Guyette uses thermoset resins to impregnate the paper sheets. True, Guyette does use thermoset resin to impregnate the paper sheets, as does applicant. Applicant claims that the elastomer is used as a stress relieving between the cementitious substrate and at least one resin impregnated paper. Applicant is not claiming that the elastomer is acting as a stress reliever for the entire building material only between the cementitious substrate and the resin impregnated paper. Therefore, applicant’s argument regarding the adhesives of Guyette is inconsistent with what applicant is claiming. Applicant argues that the Guyette reference is used for indoor applications. Applicant admits that the claimed invention can be used for both indoor and outdoor applications. Applicant claims a broad range of elastomers, which have a modulus of elasticity at 100% of between 10 and 10,000 psi and an elongation between 100% and 1000%. Guyette discloses a broad range of epoxies, which include reactive epoxies that can have a modulus of elasticity at 100% of between 10 and 10,000 psi and an elongation between 100% and 1000%. Additionally, isocyanate/urethane resins have a high elastic modulus and are extremely flexible (see Hawley’s Condensed Chemical Dictionary). The rejection is maintained.

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Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena L Dye, can be reached at (571) 272-3186. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


RENA DYE
SUPERVISORY PATENT EXAMINER
A.U. 1774 12/22/05